

In the Claims:

Please cancel the amended claims 1-13 of the International application (PCT) and substitute the following new claims.

14. A device for producing a monocrystal by growing the monocrystal from a melt of raw materials with a heating appliance for generating a temperature gradient within the melt of raw material, wherein the heating appliance comprises a rotationally symmetrical furnace with a rotation axis (M) and with an essentially level floor heater and an essentially level cover heater that can be controlled to different temperatures, the device further comprising:

a first insulating device that is structured and arranged in such a way that a heat flow in a radial direction perpendicular to the rotation axis (M) of the furnace can be controlled at a preset rate; and

a second insulating device that is structured and arranged to provide an insulating effect having a gradient from the cover heater to the floor heater.

15. A device in accord with Claim 14, wherein the furnace is cylindrical and further comprising a controller to control a temperature of the floor heater to be lower than a temperature of the cover heater.

16. A device in accord with Claim 14, further comprising an insulator device having a tapered cone body with a coaxial cylindrical hollow space that is open at the top and bottom, the insulator device being positioned in the furnace so that the tapered end is towards the floor heater.

*Amended*

17. A device in accord with Claim 14, further comprising a jacket heater for the furnace.

18. A device in accord with Claim 14, further comprising a heat transmission part having a rotationally symmetrical profiled or unprofiled shape.

19. A device in accord with Claim 14, wherein the heaters comprise a heating surface having a ratio to a surface of a monocrystal to be produced to provide a temperature that is essentially homogeneous over a radial cross-section of the monocrystal and a temperature gradient between the floor heater and the cover heater that is essentially constant.

20. A device in accord with Claim 19, wherein the surface of each heater is at least 1.5 times the cross-sectional area of the monocrystal.

21. A device in accord with Claim 15, wherein the controller can lower the temperature of the floor heater continuously with reference to the cover heater.

22. A device in accord with Claim 14, the device further comprising a clearance between the floor heater and the cover heater, the clearance being greater than the length of a monocrystal to be produced.

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23. A device in accord with Claim 14, wherein said first insulator device comprises graphite.

24. A device in accord with Claim 14, further comprising a crucible for receiving the melt of raw material, the crucible being located between the floor heater and the cover heater.

25. A device in accord with Claim 14, wherein the furnace is cylindrical and further comprising:

a controller to control a temperature of the floor heater to be lower than a temperature of the cover heater;

an insulator device having a tapered cone body with a coaxial cylindrical hollow space that is open at the top and bottom, the insulator device being positioned in the furnace so that the tapered end is towards the floor heater;

a jacket heater for the furnace;

a crucible for receiving the melt of raw material, the crucible being located between the floor heater and the cover heater; and

a clearance between the floor heater and the cover heater, the clearance being greater than the length of a monocrystal to be produced.

26. A device in accord with Claim 25, further comprising a heat transmission part having a rotationally symmetrical profiled or unprofiled shape.

27. A device in accord with Claim 25, wherein the floor and cover heaters comprise a heating surface having a ratio to a surface of a monocrystal to be produced to provide a temperature that is essentially homogeneous over a radial cross-section of the monocrystal and a temperature gradient between the floor heater and the cover heater that is essentially constant.

28. A device in accord with Claim 27, wherein the surface of each of the floor and cover heaters is at least 1.5 times the cross-sectional area of the monocrystal.

29. A device in accord with Claim 25, wherein the controller can lower the temperature of the floor heater continuously with reference to the cover heater.

30. A device in accord with Claim 25, wherein said first insulator device comprises graphite.

31. A method for producing a monocrystal of a III-V composite semiconductor material, said method comprising growing the monocrystal in a device according to any one of Claims 14 to 30.

32. A method for producing a monocrystal of gallium arsenide, said method comprising growing the monocrystal in a device according to any one of Claims 14 to 30.